

RCRA PERMIT
ADMINISTRATIVE RECORD
FARR, FRIEDMAN & BRUYA, INC.
ENVIRONMENTAL CHEMISTS

WA 2917

8-25-87

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James K. Farr, Ph.D.
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August 25, 1987

FILE COPY

John Biggane, Project Manager
GeoEngineers, Inc.
2405 - 140th Avenue N.E., Suite 105
Bellevue, WA 98005

Dear Mr. Biggane:

Results of the gas and ground water sample for the City Ice Project #1074-02 are enclosed.

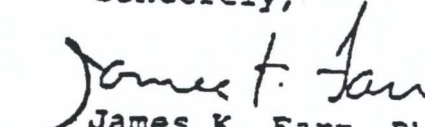
The aqueous sample was analyzed for Total Petroleum Hydrocarbons using thin layer chromatography; Gasoline/Diesel and BTEX were run by the usual gas chromatographic methods.

Hexane: 100 μ l of hexane was mixed with 9.9 mL of chromatography grade CS_2 . From this stock solution, three working solutions were prepared by diluting 8 μ l, 80 μ l and 800 μ l to 10 mL with CS_2 , respectively. These working solutions were used to generate the gas standards by taking 10 μ l of the solution and injecting it into a Teflon capped 20 mL glass vial, giving final gas concentrations (after 10 min. equilibration) of 35 ng/mL, 35 ng/mL and 350 ng/mL.

Standards for Benzene, Toluene and Xylenes were prepared similarly. The halogenated hydrocarbon standards were prepared by injecting 7.5 and 1.5 μ l of a 100 ppm stock of the analytes into a 20 mL Teflon capped vial containing 15 mL of water. A calibration curve was prepared by repeated injections of 37,500 and 7,500 pg/mL of the analytes. Methane standards were prepared by dilution of a 99.95% primary standard to give 100, 50 and 1 ppm concentrations.

If you have any questions about the results, please call me at 285-8282.

Sincerely,


James K. Farr, Ph.D.
Chemist

JKF/cag

USEPA RCRA



3012544

Date of Report: August 25, 1987

Date Submitted: August 19, 1987

RESULTS OF ANALYSIS OF WATER SAMPLE FOR
BTX AND ETHYLBENZENE.
CITY ICE SITE #1074-02

<u>Sample #</u>	<u>Benzene</u> (ppm)	<u>Toluene</u> (ppm)	<u>Xylene</u> <i>m,p</i> (ppm)	<u>o</u> (ppm)	<u>Et-Benzene</u> (ppm)
MW-1	30	<10	<10	20	<10
<u>Quality Assurance</u>					
Blank	<10	<10	<10	<10	<10

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RESULTS OF ANALYSIS OF GAS SAMPLE FOR
BTX AND ETHYLBENZENE
CITY ICE SITE #1074-02

<u>Sample #</u>	<u>Benzene</u> (ppm)	<u>Toluene</u> (ppm)	<u>m, p</u> (ppm)	<u>Xylene</u> o (ppm)	<u>Et-Benzene</u> (ppm)
MW-1 :	<1	Trace. ^a	<1	<1	<1
<u>Quality Assurance</u>					
Blank	<1	<1	<1	<1	<1

a - Contamination estimated at 1-5 ppm.

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RESULTS OF ANALYSIS OF GAS SAMPLE FOR
TOTAL HYDROCARBONS AND METHANE
CITY ICE SITE # 1074-02

<u>Sample #</u>	<u>Total Hydrocarbons as n-Hexane ppm (v/v)</u>	<u>Methane ppm (v/v)</u>
MW-1	<100	20
<u>Quality Assurance</u>		
Blank	<100	
MW-1 Duplicate		25

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RESULTS OF ANALYSIS OF WATER SAMPLE FOR
GASOLINE, DIESEL #1, DIESEL #2
AND TOTAL PETROLEUM HYDROCARBONS
CITY ICE SITE #1074-02

<u>Sample #</u>	<u>Gasoline</u> (ppm)	<u>Diesel</u> <u>#1</u> (ppm)	<u>#2</u> (ppm)	<u>Total</u> <u>Petroleum</u> <u>Hydrocarbons</u> (ppm)
MW-1	<1.a	<1.a,b	<10.a,b	5.c

a - After 100/1 concentration of sample extract.

b - A trace of diesel was observed.

c - After 10/1 concentration of sample extract.

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ANALYSIS OF GAS SAMPLE
FOR SELECTED ANALYTES.Sample # MW-1
Date: ppm (v/v)Analyte

Vinyl Chloride	<1
1,1-Dichloroethylene	<1
Methylene Chloride	<1
t-Dichloroethylene	<1
1,1-Dichloroethane	<1
1,1,1-Trichloroethane	<1
1,2-Dichloroethane	<1
Trichloroethylene	<1
Tetrachloroethylene	<1